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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,597	02/14/2002	Francis Mouyen	49316/280551	9713

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EXAMINER

THOMAS, COURTNEY D

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/049,597	Applicant(s) MOUYEN, FRANCIS	
	Examiner Courtney Thomas	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

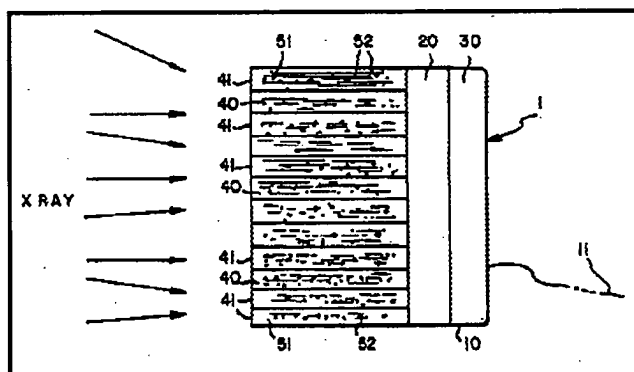
DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mouyen (U.S. Patent 5,382,798) in view of Tachibana et al. (U.S. Patent 6,030,119).

3.



[57]

ABSTRACT

Ionizing radiation sensors, such as X-ray or Gamma-ray sensors, used in industrial or medical radiology imaging systems. The sensor (1) employs a charge-coupled device (20) coupled to a scintillator element (51) and a filter for impeding the passage of ionizing radiation not transformed by the scintillator element (51). The filter is formed by the combination of a non-optical element which consists of a group of tubular guides (40), wholly or partly metallic, and the scintillator element (51) which consists of a scintillator material charged with absorbant particles (52). The scintillator element (51) is housed in the non-optical element (40). The sensor (1) is particularly usable in the field of intra-oral dental radiology.

4.

Figure 1 & Abstract – U.S. Patent 5,382,798 to Mouyen

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5. As per claim 16, Mouyen discloses a sensor comprising a plurality of cylindrical rods (40) positioned side by-side with each rod having a longitudinal axis configured to guide X-rays along the longitudinal axes of the cylindrical rods and transforming the guided X-rays into light rays of wavelength greater than the first wavelength, the cylindrical rods being produced from a material enabling both the guiding and the transformation of the X-rays (see abstract and Fig. 1, above). Mouyen does not explicitly disclose a sensor comprising a plurality of optical fibers connected to the cylindrical rods.

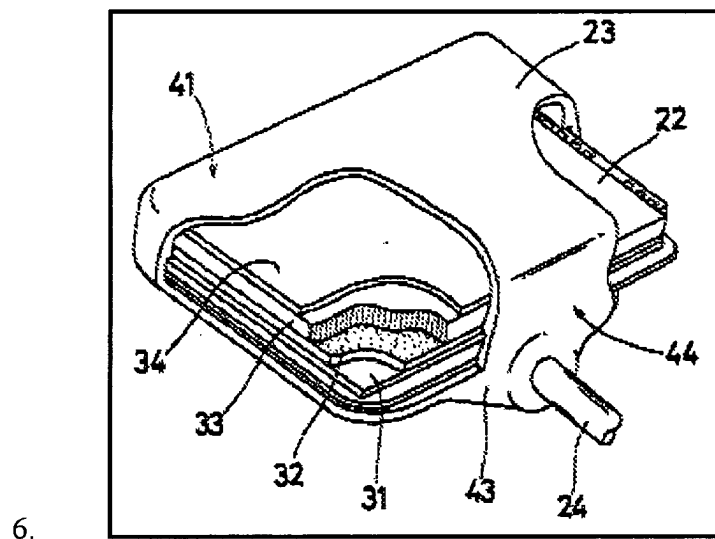


Figure 2

7. Tachibana et al. disclose a sensor comprising a plurality of optical fibers (33) configured to guide visible light from scintillating material (34) directly to the converting means (32). Tachibana et al. teach the use of a plurality of optical fibers as a means of directing converted radiation directly to sensing elements (see column 5, lines 42-45).

8. It would have been obvious to modify the apparatus of Mouyen such that it incorporated a plurality of optical fibers for connection to the cylindrical rods. One would have been motivated to make such a modification so that converted radiation (i.e. visible light) is captured

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and channeled to respective receiving portions of sensing elements, thereby ensuring minimal signal transfer loss between the cylindrical rods and the corresponding sensing elements as suggested by Tachibana et al.

9. **As per claims 17-20 and 23**, Mouyen as modified, discloses a sensor comprising means (20) for converting light rays to electrical signals, wherein the means (20) comprises a CCD; each of the cylindrical rods (40) has an outlet face to which an optical fiber is connected; each of the cylindrical rods (40) has an inlet face capable of receiving the X-rays and the outlet faces are capable of emitting light rays and the cylindrical rods form a mosaic (see Figs. 4 and 5, not shown above).

10. **As per claim 21**, Mouyen as modified, does not explicitly disclose a sensor wherein the cylindrical rods are comprised of CsI (cesium iodide).

11. It would have been obvious to further modify the sensor of Mouyen such that it incorporated cylindrical rods comprised of CsI (cesium iodide). One would have been motivated to make such a modification so that incident radiation is converted to visible light, thereby enabling detection elements to receive radiation possessing lower levels of intensity. Additionally, practitioners would recognize the use of CsI as a conventional scintillating material, and would thereby regard it an obvious design choice.

12. **As per claim 22**, Mouyen as modified, does not explicitly disclose a sensor wherein the cylindrical rods have a length between 80 and 200 μm and a diameter of between 3 and 7 μm .

13. Mouyen teaches cylindrical rod configuration based on the attenuation needs of an application as well as the desired resolution characteristics (column 2, lines 53-68).

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14. It would have been obvious to further modify the apparatus of Mouyen such that it incorporated cylindrical rods having a length between 80 and 200 μm and a diameter of between 3 and 7 μm . One would have been motivated to make such a modification so that desired attenuation of incident radiation and resolution characteristics are achieved, as taught by Mouyen (column 2, lines 53-68).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CT
Courtney Thomas


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER